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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,185	01/25/2002	Eric Adler	BUR919990222US2	8374

28722 7590 03/11/2003

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EXAMINER

BOSWELL, ALAN M

ART UNIT PAPER NUMBER

3729

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/057,185

Applicant(s)

ADLER, ERIC

MI

Examiner

Alan M Boswell

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9,18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5356833 to Maniar.

Maniar teaches forming a bottom plate (10,61) forming a dielectric layer 63 overlaying the bottom plate (10,61); forming over the dielectric layer 63 a top plate (91,93) having a smaller area than the bottom plate (10,61) the top plate (91,93) having a perimeter; forming at least one insulating sidewall spacer 74 placed against the perimeter of the top plate (91,93) and overlaying a portion of the dielectric layer 63 (see Figs. 10-11 and col. 7, lines 35-67).

Regarding claims 18-19, Maniar teaches forming at least one insulating sidewall spacer 74 on top surface of the dielectric layer 63 and overlaying a portion of the bottom plate (10/61) (see Figs. 10-19).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maniar in view of US Patent No. 5789320 to Andricacos.

Regarding claim 10, Maniar teaches prior to forming at one insulating sidewall spacer 74, etching the top plate 71 but fails to teach etching to expose the dielectric at the perimeter of the top plate.

Andricacos teaches prior to forming at one sidewall spacer, etching the top plate to expose the dielectric at the perimeter of the top plate (see Figs 3a-3e) in order to eliminate undesired interactions between conductive layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Maniar invention light of the teaching of Andricacos in order to eliminate undesired interactions between conductive layers.

Regarding claims 11-13 and 20, Maniar teaches the above the limitation but fails to teach forming a conductor embedded in a substrate and forming the bottom plate comprises forming the bottom plate overlaying the conductor and the conductor comprising a copper damascene structure.

Andricacos teaches forming a conductor embedded 1 in a substrate 2; and forming the bottom plate 6 comprises forming the bottom plate 6 overlaying the conductor 1 and the conductor 1 comprising a copper damascene structure (see Fig. 8, cols. 3 and 6, lines 14 and 25-40) in order to eliminate undesired interactions between conductive layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Maniar invention light of the teaching of Andricacos in order to eliminate undesired interactions between conductive layers.

Regarding claim 14, Andricacos teaches forming a bottom plate 19 and forming a top plate 22 comprises forming a metal plate (see Figs 15a-f and col. 5, lines 5-34)

5. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maniar to US Patent No. 5893734 to Jeng.

Maniar fails to teach forming an insulating cap overlaying the top plate, wherein the insulating cap has perimeter coextensive with top plate and wherein forming at least one insulating sidewall spacer comprising at least one insulating sidewall spacer against the of the insulating cap.

Jeng teaches forming an silicon dioxide insulating cap layer 20 overlaying the top plate 18, wherein the insulating cap 20 has perimeter coextensive with top plate 18 and wherein forming at least one insulating sidewall spacer 22 comprising at least one insulating sidewall spacer 20 against the of the insulating cap 20 (see Figs. 2-6 and col. 5, lines 29-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Maniar invention light of the teaching of Jeng for the purpose of increasing the dielectric constants.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent is cited to show the state of the art in the method of making capacitors having sidewall spacer protecting the dielectric layer.

US Patent No. 6184143 to Ohashi.

Telephone inquiries regarding the status of applications or other general questions, by persons entitled to the information, should be directed to the group clerical personnel. In as much as the official records and applications are located in the clerical section of the examining groups, the clerical personnel can readily provide status information. M.P.E.P. 203.08. The Group clerical receptionist number is (703) 308-1148.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan M Boswell whose telephone number is (703) 305-0308. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3579 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2572.

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Other helpful telephone numbers are listed for applicant's benefit.


Allowed Files & Publication	(703) 308-6789 or (888) 786-0101
Assignment Branch	(703) 308-9723
Certificates of Correction	(703) 305-8309
Drawing Corrections/Draftsman	(703) 305-8404/8335
Petitions/Special Programs	(703) 305-9285
Terminal Disclaimers	(703) 305-8408
PCT Help Desk	(703) 305-3257

If the information desired is not provided above, or a number has been changed, please call the general information help line below.

Information Help line	1-800-786-9199
Internet PTO-Home Page	<a href="http://www.uspto.gov">http: www.uspto.gov</a>

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March 5, 2003



**A. DEXTER TUGBANG**  
**PATENT EXAMINER**